

shields. The back has six regular longitudinal ridges of keeled shields, with one or two more or less distinct series of smaller keeled shields on the outside of the six larger ones. The two central keels of the shields are continued down the base of the tail to about the middle; the two lateral series of keeled shields are distinct for thirteen or fourteen cross series to just before the thighs, and at the fourteenth or fifteenth they are continued in a single series on each side of the tail, becoming much enlarged in the middle of the upper part of the tail, and then united into one central series of larger more compressed scales to the end of the tail.

The genus *Molinia* is known from *Crocodylus* by the dorsal shields being much more irregular. There are generally only two, rarely four, occipital shields, forming a cross line, the outer ones, when present, being smaller. The nuchal disk is formed of six large oblong keeled shields. The dorsal disk is formed of six longitudinal series of keeled scales: the two central series are the largest, but with bluntest keels; and they are continued to the base of the tail, when the keel becomes obliterated. The two lateral series are irregular, the inner one the largest, and it is continued over the top of the thighs, and down the side of the tail; the outer one is very irregular, interrupted, and with one or two small shields on the outside of it. This genus is at once known by the second series of shields on each side being continued along the side of the tail, and not the second and third on each side uniting and being continued along the side of the tail.

CROCODYLUS MADAGASCARIENSIS. (Plate XXIII.)

The beak slender, elongate, with a slight ridge on each side of the central line, united just behind the nostrils. Sides of the lower jaw pale, with large irregular black spots.

C. vulgaris, var., Cuvier, Oss. Foss. p. 44; Gray, Hand-list Sh. Rept., p. 135. Specimens "o" and "p."

Hab. Madagascar.

B.M.

There are three specimens of this Crocodile in the British Museum:—two in spirits, one (63. 5. 21. 4) purchased of the Zoological Society as *Crocodylus vulgaris*, and one (65. 3. 4. 5) of Mr. Stevens; also one stuffed 35½ in. long (73. 11. 10. 1), purchased of Mr. Higgins, collected by Mr. Lormier, who was lately accidentally burnt to death in Madagascar.

5. Note on the Cranial and Dental Characters of the Northern and Southern Tigers and Leopards of China as affording Marks of their Specific Distinction. By GEORGE BUSK, V.P.Z.S.

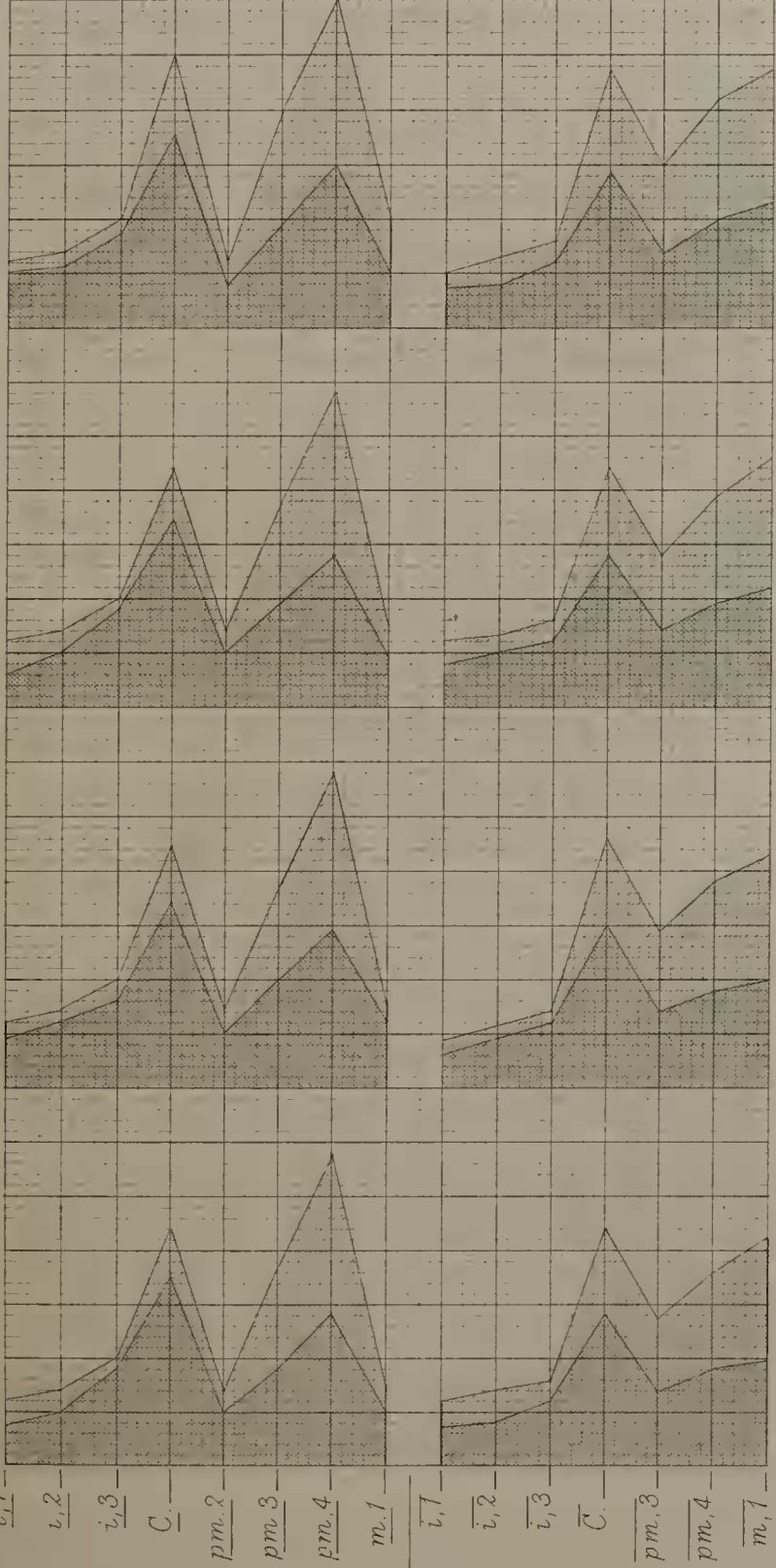
[Received February 17, 1874.]

(Plates XXIV. & XXV.)

Mr. Robert Swinhoe has brought with him from China two Tiger skulls, one of which is, I believe, a unique specimen in Europe of the

Indian Tigers.

Chinese Tigers.



G. B.

N^o 4512 G. C. S.

Southern

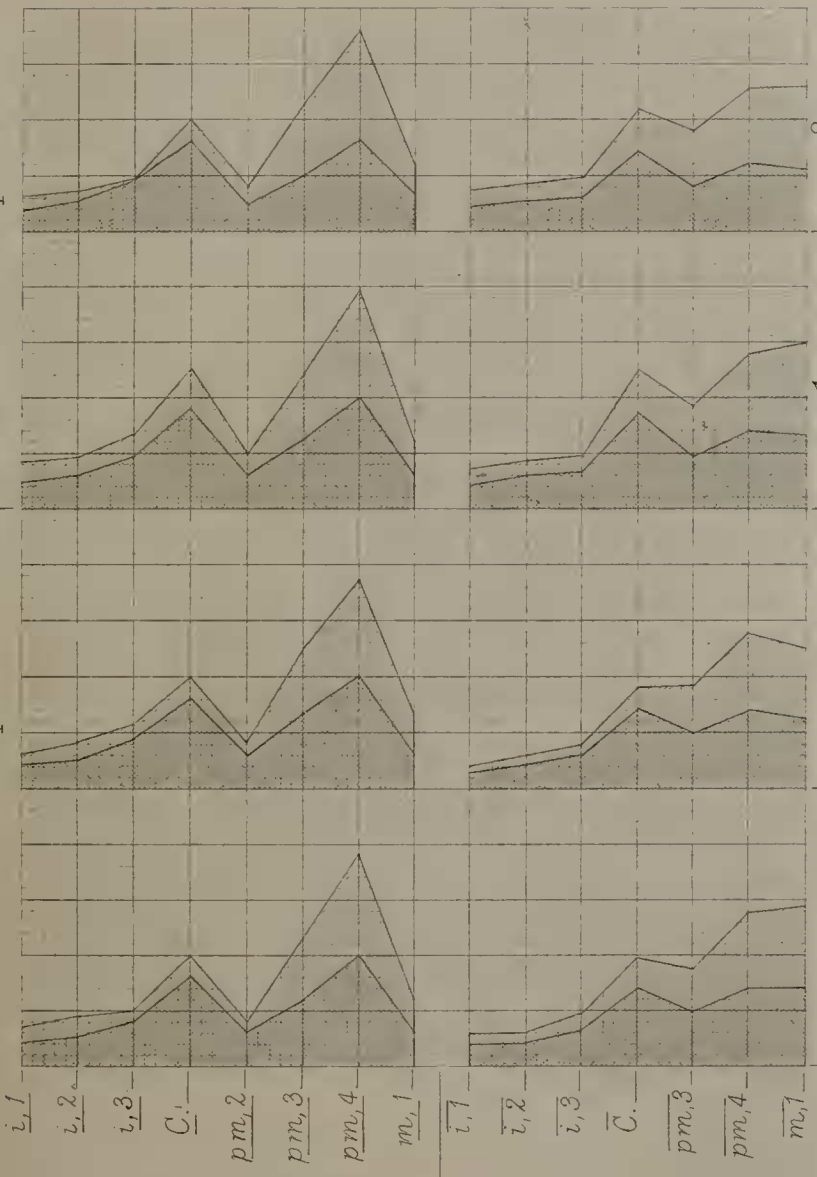
Northern

Odontogram of Tigers



Indian Leopards

Chinese Leopards.



N° 4562. R.C.S. ♀

N° 4561. R.C.S. ♂

Ningpo.

Newchwang.

Odontogram of Leopards.

W. West & Co lith.



skull of the long-haired Manchurian Tiger, and the other that of the form inhabiting the southern parts of the empire.

He has also procured skulls of the Leopards met with in the corresponding countries, and has been good enough to place the collection in my hands for comparison, and in order that the Society may have an opportunity of viewing them.

1. *Skulls of Felis tigris.*

One of these, upon which the soft parts in a dried state still remain so as somewhat to interfere with the examination, but not materially, is from Fychoo, 120 miles inland from Ningpo in the south of China; and the other, that of a Manchurian Tiger, from Kirin, in the north of the empire. The latter was taken out of a long-haired skin, procured by the Governor of the port of Newchwang; so that, as Mr. Swinhoe states, there can be no doubt of its genuineness.

That from Fychoo belonged to a short-haired animal undistinguishable, in Mr. Swinhoe's opinion, from the Bengal Tiger.

He also states that the long-haired variety is so far adapted to a cold climate that in the winter it is observed to live in burrows under the snow.

The closest comparison I have been able to make between these two externally distinct varieties fails to indicate any thing approaching a specific distinction between them; nor, again, do they appear in any respect to differ, so far as the cranial and dental characters are concerned, from the Indian species.

2. *Skulls of Felis leopardus.*

The same may be said of the two Leopard skulls submitted to my inspection by Mr. Swinhoe.

One of these skulls is that of the species (or of a species) inhabiting the mountains near Ningpo, and regarded by Mr. Swinhoe as identical in every respect with the Indian Leopard; whilst the other was procured at the port of Newchwang from a native of the country. The latter, Mr. Swinhoe remarked to me, might probably be the *Felis fontanieri* of M. Alphonse Milne-Edwards*; but this is perhaps an erroneous impression. However this may be, in the cranial and dental characters at all events there is no appreciable distinction between the northern and southern forms brought by Mr. Swinhoe; and as further comparison of these skulls with that of the Indian Leopard only serves fully to confirm Mr. Swinhoe's opinion as to their identity with *Felis leopardus* of India, we are compelled to the conclusion that that species inhabits both the northern and southern parts of China, and is, like the Tiger, capable, with some modification

* Ann. des Sc. Nat. 5^me sér. tom. viii., and 'Recherches pour servir à l'histoire naturelle des Mammifères,' p. 208, 1872.

of its fur, of enduring the rigours of the severe winter in the former region.

M. Alphonse Milne-Edwards describes his *Felis fontanieri* from the neighbourhood of Peking as possessing much longer and thicker hair than the common species, and a remarkably bushy tail. But more important distinctive characters adduced by him are those presented by the skull: he states that in *F. fontanieri* the cranium is much more arched in the antero-posterior direction than it is in the African and Indian Panther, and that the brain-case proper is comparatively more developed, especially in width; the fronto-nasal region is more elongated, the posterior border of the palate deeply notched within the tubercular teeth, and the opening of the posterior nares short and wide. As none of these characters applies to the Newchwang Leopard's skull as compared with that from Ningpo, it is clear that we cannot regard the former as *F. fontanieri*, A. M.-Edw.; and we may perhaps, in the absence of fuller information respecting the latter, be led to the conclusion suggested by M. A. Milne-Edwards that there are two distinct species of Leopards in China, both of which, according to M. Fontanier, are found in the neighbourhood of Peking.

In order to render the evidence clear upon which I have gone, I have subjoined a Table showing the comparative measurements of the skulls and teeth in the Chinese as contrasted with the Indian Tigers and Leopards*.

I have also appended (Plates XXIV. & XXV.) *odontograms*, or graphic representations, of the dimensions and proportions of the teeth in the various forms—a glance at which will alone suffice to show how close the resemblance in these essential particulars is in the respective species, the slight differences observable being clearly merely individual variations†.

To judge from the figure of the skull of *Leopardus chinensis*, Gray (P. Z. S. 1867, p. 264), and the brief description accompanying it, that species would appear to have a strong resemblance to those brought by Mr. Swinhoe—the principal difference, so far as I can perceive, being the comparatively rather smaller size of *L. chinensis*.

* Comparison of the various dimensions of the skull of *F. fontanieri* given in Table II. would lead to the conclusion that that species does not materially differ from *F. leopardus*.

† The construction of these figures will be found explained in the 'Proc. Roy. Soc.' no. 122, vol. xviii. p. 544. But to save trouble I would merely remark that each horizontal line represents the length and breadth of the antero-posterior and transverse diameters of a tooth, the latter diameter being indicated by the dark shade. The scale is divided into $\frac{1}{25}$ ths of an inch (0'·05).